

# PATENT ABSTRACTS OF JAPAN

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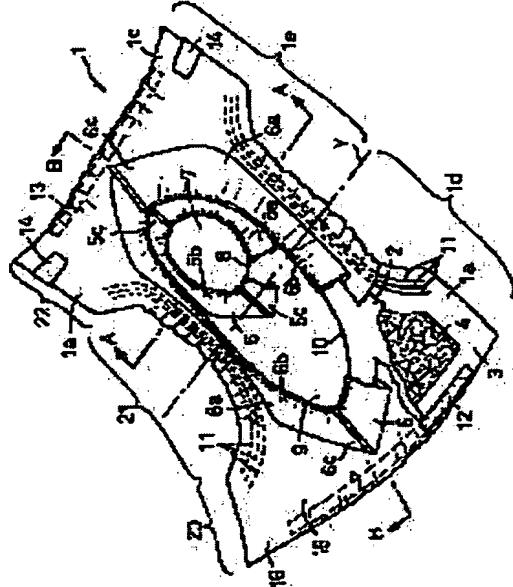
OTSUBO TOSHIBUMI

## (54) DISPOSABLE DIAPER

### (57) Abstract:

PROBLEM TO BE SOLVED: To prevent the mixing of discharged urine with stool.

SOLUTION: A disposable diaper is constituted of a laminated panel 1 consisting of a top sheet 2, a back sheet 3, the core 4 interposed between these sheets 2, 3 and the first leak-proof sheet 5 extending on the outer surface of the top sheet 2 in an annular shape and the outer peripheral edge part 5a of the first leak-proof sheet 5 positioned on the latter half region 1e of the panel 1 is fixed to the panel 1 to demarcate a first opening part 7 to the almost central part of the first leak-proof sheet 5 and the second leak-proof sheet 6 surrounding the first leak-proof sheet 5 to extend in an annular shape is positioned on the first and latter half parts 1d, 1e of the panel 1 and the outer peripheral edge part 6a of the second leak-proof sheet 6 is fixed to the peripheral edge part of the panel 1 to demarcate a second opening part 8 to the almost central part of the second leak-proof sheet 6.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] A liquid permeability top sheet, a non-liquid-permeable nature backseat, and the absorbent core that intervenes among these sheets, The edges-on-both-sides section to which it consists of laminated panels equipped with the 1st watertight sheet of the liquid resistance annularly prolonged by the appearance of said top sheet, and said panel extends to a lengthwise direction in parallel mutually, It has the edge section before and after extending to a longitudinal direction in parallel mutually. The periphery edge of said 1st watertight sheet In the disposable diaper with which it fixes on said panel, the 1st opening is formed by the abbreviation center section of said 1st watertight sheet, and the inner circumference edge of said 1st watertight sheet has elastic elasticity along with said 1st opening A part for the first portion by which said 1st watertight sheet goes to the front end edge of said panel near [ which bisects the dimension of the edges-on-both-sides section of said panel to said lengthwise direction, and extends to said longitudinal direction ] the horizontal center line, It is located in either of the parts the second half in which it goes to the trailing edge of said panel near [ said ] the horizontal center line. The 2nd watertight sheet of the liquid resistance which surrounds said 1st watertight sheet and is prolonged annularly It is located in a part in a part for the first portion, and the second half of said panel. The periphery edge of said 2nd watertight sheet Said diaper with which it fixes in the periphery section of said panel, the 2nd opening is formed by the abbreviation center section of said 2nd watertight sheet, and the inner circumference edge of said 2nd watertight sheet is characterized by having elastic elasticity along with said 2nd opening.

[Claim 2] The diaper according to claim 1 which the periphery edge of said 1st watertight sheet was located inside said panel rather than the periphery edge of said 2nd watertight sheet, and said top sheet has exposed between the periphery edges of these sheets.

[Claim 3] The diaper according to claim 1 or 2 which the inner circumference edge of said 1st watertight sheet was located inside said panel rather than the inner circumference edge of said 2nd watertight sheet, and the whole region of said 1st opening has exposed from said 2nd opening.

[Claim 4] claim 1 whose water pressure-proof of said 1st watertight sheet said 1st watertight sheet and said 2nd watertight sheet are formed with a nonwoven fabric, and is more than it of said 2nd watertight sheet thru/or claim 3 -- a diaper given in either.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

[Field of the Invention] This invention relates to the disposable diaper for absorbing and holding excrement.

**[0002]**

[Description of the Prior Art] JP,5-277149,A A liquid permeability top sheet and a non-liquid-permeable nature backseat, It has the absorbent core which intervenes among these sheets, and the top-face sheet of the liquid resistance which is located in the outside surface of a top sheet and is prolonged annularly. The periphery edge of a top-face sheet is joined by the outside surface of a top sheet, long opening is formed by the abbreviation center section of the top-face sheet to a lengthwise direction, and the disposable diaper with which the elastic member expanded and contracted to a lengthwise direction in the periphery section of opening of a top-face sheet was attached is indicated. A diaper can prevent the leakage of the excrement from the edges-on-both-sides section of a diaper, and the order edge section by attaching in the outside surface of a top sheet the top-face sheet prolonged annularly.

**[0003]**

[Problem(s) to be Solved by the Invention] Since the urine and facilities which were excreted inside opening are inseparable, the urine which flows the outside surface of a top sheet, and a loose passage and watery stool may be mixed, or it may be mixed with urine and the diaper of the disclosure to JP,5-277149,A may be loose-passage-ized, even if it is solid facilities. When the mixture of urine and facilities adheres to a wearer's skin, a wearer memorizes displeasure.

[0004] The technical problem of this invention is to offer the disposable diaper which can prevent mixing these urine and facilities, preventing the excreted urine and facilities leaking from the edges-on-both-sides section of a diaper, and the order edge section.

**[0005]**

[Means for Solving the Problem] In order to solve the technical problem mentioned above, a premised place [ this invention ] A liquid permeability top sheet, a non-liquid-permeable nature backseat, and the absorbent core that intervenes among these sheets, The edges-on-both-sides section to which it consists of laminated panels equipped with the 1st watertight sheet of the liquid resistance annularly prolonged by the appearance of said top sheet, and said panel extends to a lengthwise direction in parallel mutually, It has the edge section before and after extending to a longitudinal direction in parallel mutually. The periphery edge of said 1st watertight sheet It fixes on said panel, the 1st opening is formed by the abbreviation center section of said 1st watertight sheet, and the inner circumference edge of said 1st watertight sheet is the disposable diaper which has elastic elasticity along with said 1st opening.

[0006] In this premise, the place by which this invention is characterized A part for the first portion by which said 1st watertight sheet goes to the front end edge of said panel near [ which bisects the dimension of the edges-on-both-sides section of said panel to said lengthwise direction, and extends to said longitudinal direction ] the horizontal center line, It is located in either of the parts the second half in which it goes to the trailing edge of said panel near [ said ] the horizontal center line. The 2nd watertight sheet of the liquid resistance which surrounds said 1st watertight sheet and is prolonged annularly It is located in a part in a part for the first portion, and the second half of said panel. The

periphery edge of said 2nd watertight sheet. It fixes in the periphery section of said panel, the 2nd opening is formed by the abbreviation center section of said 2nd watertight sheet, and the inner circumference edge of said 2nd watertight sheet is to have elastic elasticity along with said 2nd opening.

[0007] As an example of the mode of operation of this invention, the periphery edge of said 1st watertight sheet was located inside said panel rather than the periphery edge of said 2nd watertight sheet, and said top sheet is exposed between the periphery edges of these sheets.

[0008] the voice of operation of this invention -- as other examples [ like ], the inner circumference edge of said 1st watertight sheet was located inside said panel rather than the inner circumference edge of said 2nd watertight sheet, and the whole region of said 1st opening is exposed from said 2nd opening.

[0009] the voice of operation of this invention -- as other examples [ like ], said 1st watertight sheet and said 2nd watertight sheet are formed with a nonwoven fabric, and the water pressure-proof of said 1st watertight sheet is more than it of said 2nd watertight sheet.

[0010]

[Embodiment of the Invention] It is as follows when the detail of the disposable diaper concerning this invention is explained with reference to an attached drawing.

[0011] Drawing 1 is the partial fracture perspective view of a disposable diaper. The diaper consists of laminated panels 1 equipped with the absorbent core 4 which intervenes between the liquid permeability top sheet 2, the non-liquid-permeable nature backseat 3, and the top sheet 2 and a backseat 3, the 1st watertight sheet 5 of the liquid resistance annularly prolonged in the outside surface side of the top sheet 2, and the 2nd watertight sheet 6 of the liquid resistance which surrounds the 1st watertight sheet 5 and is annularly prolonged in the outside surface side of the top sheet 2. A panel 1 has the length-from-the-crotch-to-the-cuff region 21 located in a lengthwise direction between the circumference region 20 of a forward fuselage assembly, the circumference region 22 of a back drum, and the circumference regions 20 and 22 of an order drum, and has the edge sections 1b and 1c before and after extending to a lengthwise direction in parallel mutually and extending to a longitudinal direction mutually in parallel to edges-on-both-sides section 1a which draws an arc toward a way in the length-from-the-crotch-to-the-cuff region 21 among panels 1.

[0012] The 1st watertight sheet 5 is located in partial 1e the second half in which it goes to trailing edge 1c of a panel 1 near [ which bisects the dimension of edges-on-both-sides section 1a of a panel 1 to a lengthwise direction, and extends to a longitudinal direction ] the horizontal center line Y, and has periphery edge 5a prolonged annularly, inner circumference edge 5b annularly prolonged in the inside of periphery edge 5a, and lengthwise direction both-ends 5c joined to the bottom of mutual contact.

[0013] The 1st long opening 7 is formed by the abbreviation center section of the 1st watertight sheet 5 to the lengthwise direction which the abbreviation one half of the length-from-the-crotch-to-the-cuff region 21 and the abbreviation one half of the circumference region 22 of a back drum expose. In the 1st opening 7, the top sheet 2 is exposed. The elastic elasticity member 8 is attached in inner circumference edge 5b of the 1st watertight sheet 5 in the state of expanding.

[0014] The 2nd watertight sheet 6 is located in 1d of first portion parts and second half partial 1e of a panel 1 which go to front end edge 1b of a panel 1 near the horizontal center line Y, and has periphery edge 6a prolonged annularly, inner circumference edge 6b annularly prolonged in the inside of periphery edge 6a, and lengthwise direction both-ends 6c joined to the bottom of mutual contact.

[0015] The 2nd long opening 9 is formed by the abbreviation center section of the 2nd watertight sheet 6 to the lengthwise direction which the abbreviation one half of the length-from-the-crotch-to-the-cuff region 21 and the circumference regions 20 and 22 of an order drum exposes. Inner circumference edge 6b of the 2nd watertight sheet 6 is located in the outside of inner circumference edge 5b of the 1st watertight sheet 5, and the 2nd opening 9 surrounds the 1st opening 7. In the 2nd opening 9, the top sheet 2 was exposed to 1d of first half parts of a panel 1, and the whole region of the 1st opening 7 is exposed to second half partial 1e of a panel 1. The elastic elasticity member 10 is attached in inner circumference edge 6b of the 2nd watertight sheet 6 in the state of expanding. From periphery edge 6a of the 2nd watertight sheet 6, the support sheet 15 of liquid resistance is prolonged

to the method of the outside of the direction of the surroundings of periphery edge 6a.

[0016] The elastic member 11 for the circumferences of a foot prolonged to a lengthwise direction is attached in edges-on-both-sides section 1a of a panel 1 in the state of expanding, and the elastic members 12 and 13 for the circumferences of a drum of the shape of a film prolonged to a longitudinal direction in the panel 1 order edge sections 1b and 1c intervene between the top sheet 2 and a backseat 3, and are attached in one [ at least ] inner surface of these sheets 2 and 3 in the state of expanding. The tape fastener 14 prolonged to the method of the inside of a longitudinal direction is attached in edges-on-both-sides section 1a of the panel 1 in the circumference region 22 of a back drum, and the target tape (not shown) of the rectangle used as the firm attachment region of the tape fastener 14 is attached in the outside surface of the backseat 3 in the circumference region 20 of a forward fuselage assembly.

[0017] In drawing 1 , the expanding condition of the elastic members 8 and 10 attached in the 1st and 2 watertight sheets 5 and 6, the elastic member 11 for the circumferences of a foot, and the elastic members 12 and 13 for the circumferences of a drum is canceled, and gathers are formed along with the inner circumference edges 5a and 6a of the 1st and 2 watertight sheets 5 and 6, edges-on-both-sides section 1a of a panel 1, and the panel 1 order edge sections 1b and 1c.

[0018] Drawing 2 and 3 are with the perspective view of the diaper in which the A-A line view cross section of drawing 1 is shown, and the B-B line view sectional view of drawing 1 . The 1st watertight sheet 5 is in the condition that a part of the periphery edge 5a was bent among panels 1 to the way, and it fixed on the outside surface of the top sheet 2, among those a part of periphery section 5b was bent among panels 1 to the way, and it has covered the elastic member 8. In lengthwise direction both-ends 5c of the 1st watertight sheet 5, the fixing region of lengthwise direction both-ends 5c has extended toward the method of the outside of a lengthwise direction of a panel 1.

[0019] Where a part of the periphery edge 6a is bent among panels 1 to a way, it fixed on the outside surface of a support sheet 15, among those a part of periphery section 6b was bent among panels 1 to the way, and the 2nd watertight sheet 6 has covered the elastic member 10. In lengthwise direction both-ends 6c of the 2nd watertight sheet 6, the fixing region of lengthwise direction both-ends 6c has extended toward the method of the outside of a lengthwise direction of a panel 1.

[0020] In the second half, by partial 1e, periphery edge 5a of the 1st watertight sheet 5 and periphery edge 6a of the 2nd watertight sheet 6 estranged mutually, and the top sheet 2 is exposed between periphery edge 5a of these sheets 5 and 6, and 6a. If a panel 1 carries out the inner surface inside and curves in a lengthwise direction and a longitudinal direction, the pocket P1 in which the 1st watertight sheet 5 and the top sheet 2 carry out opening toward a way among panels 1 will be formed, and the pocket P2 in which the 2nd watertight sheet 6 and the top sheet 2 carry out opening toward a way among panels 1 will be formed.

[0021] The top sheet 2 extended from edges-on-both-sides section 4a of a core 4 slightly to the method of the outside of a longitudinal direction, and has extended from ends edge 4b of a core 4 slightly to the method of the outside of a lengthwise direction. The backseat 3 and the support sheet 15 have extended from the periphery of the top sheet 2 further to the method of the outside of a longitudinal direction, and the method of the outside of a lengthwise direction. The inner surface of a support sheet 15 has fixed to the outside surface of the top sheet 2, and the inner surface of a backseat 3. Between a backseat 3 and a support sheet 15, the elastic member 11 for the circumferences of a foot intervenes, and it is attached in one [ at least ] inner surface of these sheets 3 and 15 in the state of expanding. The core 4 is joined by one [ at least ] inner surface of the top sheet 2 and a backseat 3.

[0022] If a panel 1 attaches the tape fastener 14 firmly to a target tape through the binder applied to the inner surface of the free edge of the tape fastener 14, circumference opening of a foot of a left Uichi pair and circumference opening of a drum will be formed (not shown).

[0023] The facilities by which the urine with which the panel 1 was excreted in the 2nd opening 9 of the first portion of a panel 1 which carries out opening by 1d per part was excreted in the 1st opening 7 which it is absorbed by the core 4 through the top sheet 2, and carries out opening by second half partial 1e of a panel 1 are absorbed by the core 4 through the top sheet 2. Since the 1st watertight sheet 5 has the function to separate a urine absorption region and a facilities absorption region in the

panel 1 order half parts 1d and 1e The 1st watertight sheet 5 can serve as an obstruction, and it can prevent that the facilities excreted in the 1st opening 7 invading into 1d of first half parts of a panel 1 and urine invade in the 1st opening 7, and can prevent mixing urine and facilities mutually.

[0024] By the panel 1, since the excreted facilities can be held in a pocket P1, even if the facilities of a large quantity are excreted, it can prevent that facilities invade into 1d of first half parts of a panel 1. Since between periphery edge 5b of the 1st watertight sheet 5 and periphery edge 6b of the 2nd watertight sheet 6 which are located in second half partial 1e of a panel 1 can be flowed even when the urine excreted by 1d of first half parts of a panel 1 flows toward trailing edge 1c of a panel 1, also in second half partial 1e of a panel 1, urine is absorbable.

[0025] the sheet of liquid permeability [ sheet / 2 / top ], such as a nonwoven fabric and a puncturing plastic film, -- it is liquid permeability preferably and the sheet of a hydrophilic property is used. a backseat 3 -- the lamination sheet of the plastic film of non-liquid-permeable nature or a plastic film, and a hydrophobic nonwoven fabric -- the sheet of aeration non-liquid-permeable nature is used preferably. the 1st and 2 watertight sheets 5 and 6 and a support sheet 15 -- a permeability nonwoven fabric -- the nonwoven fabric of aeration non-liquid-permeable nature is used preferably. The water pressure-proof of the 1st watertight sheet 5 is more than it of the 2nd watertight sheet 6, and it is desirable that the range of 150-500mm and the water pressure-proof of the 2nd watertight sheet 6 have the water pressure-proof of the 1st watertight sheet 5 in the range of 50-300mm. Since many organic substance, such as protein and a lipid, is contained in facilities, as compared with urine, the surface tension to these watertight sheets 5 and 6 is small. Moreover, since the organic substance and polyolefine system resin in facilities have compatibility when the fiber which forms a nonwoven fabric is polyolefine system resin, facilities tend to sink into a nonwoven fabric as compared with urine. Therefore, in order that facilities may make it hard to sink into the 1st watertight sheet 5, water pressure-proof of the 1st watertight sheet 5 is made higher than the 2nd watertight sheet 6.

[0026] As a nonwoven fabric, nonwoven fabrics, such as a span ball race, needle punch, melt-blown \*\* thermal bond, a span pound, and chemical bond, can be used. As configuration fiber of a nonwoven fabric, the bicomponent fiber of each fiber of polyolefine system, polyester system, and polyamide system \*\*, polyethylene/polypropylene, or polyester etc. can be used.

[0027] A core 4 is the mixture of fluff pulp and a superabsorbency polymer particle, it is compressed into necessary thickness and the whole is covered with permeable sheets, such as a tissue paper. As elastic members 8, 10, 11, 12, and 13, what fixed elastomers, such as synthetic rubber and natural rubber, or these elastomers to the nonwoven fabric in the state of expanding can be used. The technique of heat joining other than adhesives, such as hot melt adhesive, or a binder can be used for fixing of junction of a core 4, installation of elastic members 8, 10, 11, 12, and 13, sheets 2, 3, 5, and 6, and 15.

[0028] The 1st watertight sheet 5 may be arranged at 1d of first half parts of a panel 1 at a panel 1, and the 1st opening 7 may be formed by 1d of first half parts of a panel 1. In this case, the urine excreted in the 1st opening 7 of the first portion of a panel 1 which carries out opening by 1d per part is absorbed by the core 4 through the top sheet 2, and the facilities excreted in the 2nd opening 9 which carries out opening by second half partial 1e of a panel 1 are absorbed by the core 4 through the top sheet 2. In first portion part 1d, the 1st watertight sheet 5 can serve as an obstruction, and it can prevent that facilities' invading in the 1st opening 7 and urine invade into second half partial 1e of a panel 1, and can prevent mixing urine and facilities mutually.

[0029] This invention can carry out the diaper of a trousers mold besides the diaper of the open sand mold shown in drawing.

[0030]

[Effect of the Invention] Since according to the disposable diaper concerning this invention the 1st watertight sheet serves as an obstruction even if either of the urine and facilities which were excreted tends to flow, it can prevent mixing these urine and facilities. Since the 1st watertight sheet and the 2nd watertight sheet are annularly prolonged by the appearance of a top sheet, it can prevent the excreted urine and facilities leaking from the edges-on-both-sides section of a diaper, and the order edge section.

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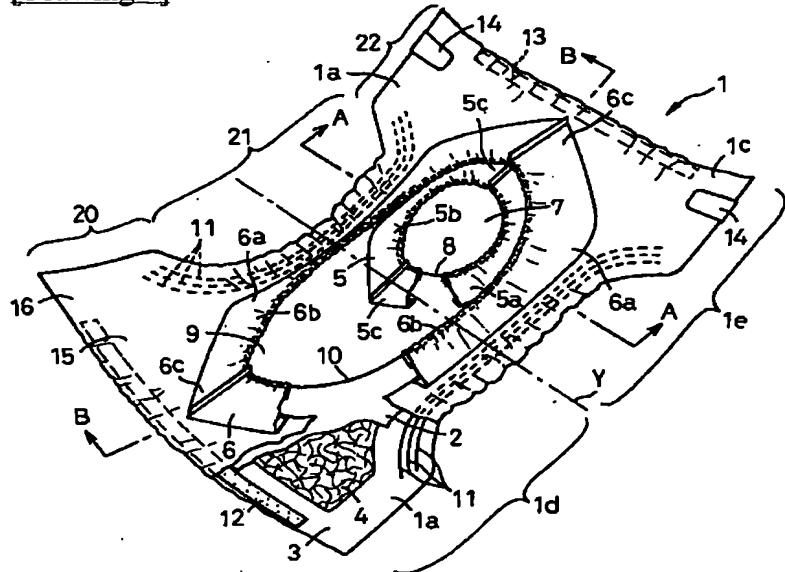
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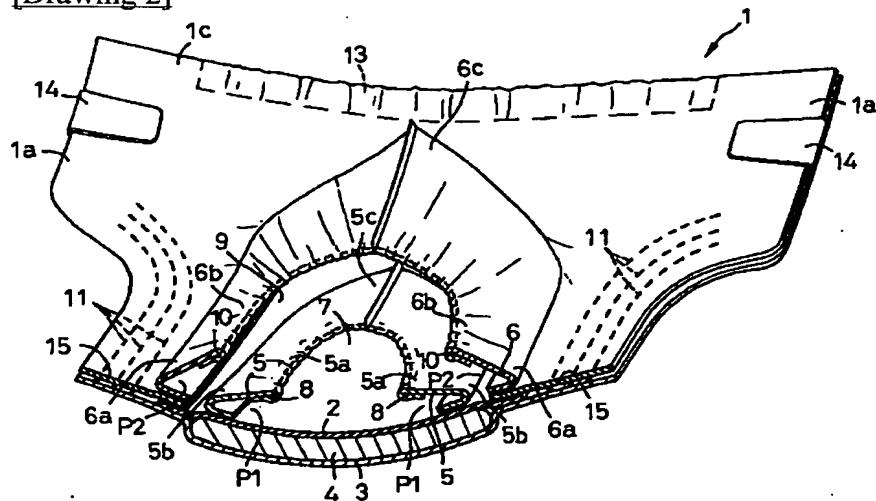
DRAWINGS

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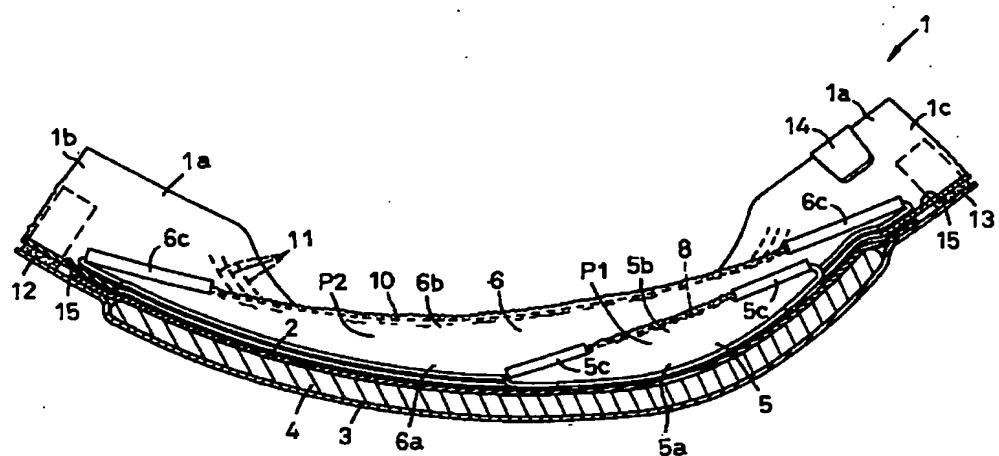
## [Drawing 1]



## [Drawing 2]



## [Drawing 3]



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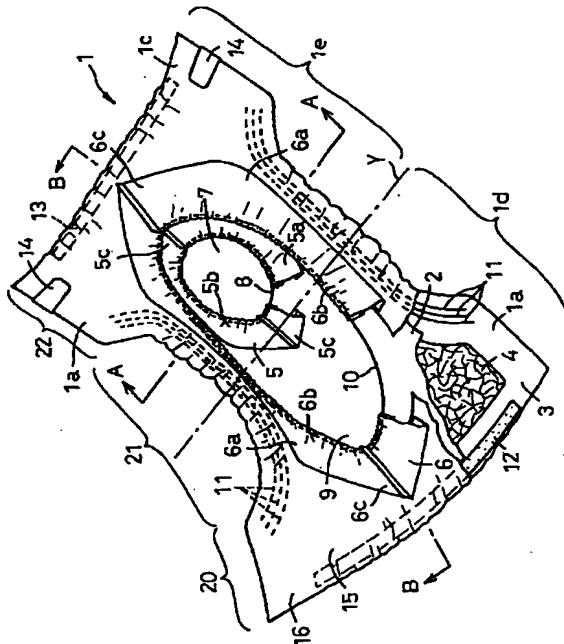
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(54)【発明の名称】 使い捨ておむつ

(57)【要約】

【課題】 排泄された尿と便とが混じり合うことを防ぐことができる使い捨ておむつを提供する。

【解決手段】 トップシート2と、バックシート3と、それらシート2、3の間に介在するコア4と、トップシート2の外面で環状に延びる第1防漏シート5とを備えた積層パネル1で構成され、パネル1の後半部位1eに位置する第1防漏シート5の外周縁部5aが、パネル1に固着されて第1防漏シート5の略中央部に第1開口部7が画成され、第1防漏シート5を囲繞して環状に延びる第2防漏シート6が、パネル1の前後半部分1d、1eに位置し、第2防漏シート6の外周縁部6aが、パネル1の周縁部に固着されて第2防漏シート6の略中央部に第2開口部8が画成されている。



## 【特許請求の範囲】

【請求項1】 透液性トップシートと、不透液性パックシートと、それらシートの間に介在する吸液性コアと、前記トップシートの外面で環状に延びる液抵抗性の第1防漏シートとを備えた積層パネルで構成され、前記パネルが、互いに並行して縦方向へ延びる両側縁部と、互いに並行して横方向へ延びる前後端縁部とを有し、前記第1防漏シートの外周縁部が、前記パネルに固着されて前記第1防漏シートの略中央部に第1開口部が画成され、前記第1防漏シートの内周縁部が、前記第1開口部に沿って弾性的な伸縮性を有する使い捨ておむつにおいて、前記第1防漏シートが、前記パネルの両側縁部の寸法を前記縦方向に二分して前記横方向へ延びる横中心線近傍から前記パネルの前端縁部へ向かう前半部分と、前記横中心線近傍から前記パネルの後端縁部へ向かう後半部位とのいすれか一方に位置し、前記第1防漏シートを囲繞して環状に延びる液抵抗性の第2防漏シートが、前記パネルの前半部分と後半部分とに位置し、前記第2防漏シートの外周縁部が、前記パネルの周縁部に固着されて前記第2防漏シートの略中央部に第2開口部が画成され、前記第2防漏シートの内周縁部が、前記第2開口部に沿って弾性的な伸縮性を有することを特徴とする前記おむつ。

【請求項2】 前記第1防漏シートの外周縁部が、前記第2防漏シートの外周縁部よりも前記パネルの内側に位置し、それらシートの外周縁部の間に前記トップシートが露出している請求項1記載のおむつ。

【請求項3】 前記第1防漏シートの内周縁部が、前記第2防漏シートの内周縁部よりも前記パネルの内側に位置し、前記第1開口部の全域が、前記第2開口部から露出している請求項1または請求項2記載のおむつ。

【請求項4】 前記第1防漏シートと前記第2防漏シートとが、不織布で形成され、前記第1防漏シートの耐水圧が、前記第2防漏シートのそれ以上である請求項1ないし請求項3いすれかに記載のおむつ。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 本発明は、排泄物を吸収、保持するための使い捨ておむつに関する。

## 【0002】

【従来の技術】 特開平5-277149号公報は、透液性トップシートと、不透液性パックシートと、それらシートの間に介在する吸液性コアと、トップシートの外面に位置して環状に延びる液抵抗性の上面シートとを備え、上面シートの外周縁部が、トップシートの外面に接合されて上面シートの略中央部に縦方向へ長い開口部が画成され、上面シートの開口部の周縁部に縦方向へ伸縮する弾性部材が取り付けられた使い捨ておむつを開示している。おむつは、トップシートの外面に環状に延びる上面シートを取り付けることで、おむつの両側縁部と前

後端縁部とからの排泄物の漏れを防止することができる。

## 【0003】

【発明が解決しようとする課題】 特開平5-277149号公報に開示のおむつは、開口部の内側に排泄された尿と便とを分離することができないので、トップシートの外面を流動する尿と軟便、水様便とが混じり合ってしまったり、固形の便であっても尿と混じり合って軟便化してしまうことがある。尿と便との混合物が着用者の肌に付着した場合、着用者が不快感を覚える。

【0004】 本発明の課題は、排泄された尿と便とがおむつの両側縁部と前後端縁部とから漏れることを防ぎつつ、それら尿と便とが混じり合うことを防ぐことができる使い捨ておむつを提供することにある。

## 【0005】

【課題を解決するための手段】 前述した課題を解決するために、本発明が前提とするところは、透液性トップシートと、不透液性パックシートと、それらシートの間に介在する吸液性コアと、前記トップシートの外面で環状に延びる液抵抗性の第1防漏シートとを備えた積層パネルで構成され、前記パネルが、互いに並行して縦方向へ延びる両側縁部と、互いに並行して横方向へ延びる前後端縁部とを有し、前記第1防漏シートの外周縁部が、前記パネルに固着されて前記第1防漏シートの略中央部に第1開口部が画成され、前記第1防漏シートの内周縁部が、前記第1開口部に沿って弾性的な伸縮性を有する使い捨ておむつである。

【0006】かかる前提において、本発明が特徴とするところは、前記第1防漏シートが、前記パネルの両側縁部の寸法を前記縦方向に二分して前記横方向へ延びる横中心線近傍から前記パネルの前端縁部へ向かう前半部分と、前記横中心線近傍から前記パネルの後端縁部へ向かう後半部位とのいすれか一方に位置し、前記第1防漏シートを囲繞して環状に延びる液抵抗性の第2防漏シートが、前記パネルの前半部分と後半部分とに位置し、前記第2防漏シートの外周縁部が、前記パネルの周縁部に固着されて前記第2防漏シートの略中央部に第2開口部が画成され、前記第2防漏シートの内周縁部が、前記第2開口部に沿って弾性的な伸縮性を有することにある。

【0007】 本発明の実施の態様の一例としては、前記第1防漏シートの外周縁部が、前記第2防漏シートの外周縁部よりも前記パネルの内側に位置し、それらシートの外周縁部の間に前記トップシートが露出している。

【0008】 本発明の実施の態様の他の一例としては、前記第1防漏シートの内周縁部が、前記第2防漏シートの内周縁部よりも前記パネルの内側に位置し、前記第1開口部の全域が、前記第2開口部から露出している。

【0009】 本発明の実施の態様の他の一例としては、前記第1防漏シートと前記第2防漏シートとが、不織布で形成され、前記第1防漏シートの耐水圧が、前記第2

防漏シートのそれ以上である。

【0010】

【発明の実施の形態】添付の図面を参照して、本発明に係る使い捨ておむつの詳細を説明すると、以下のとおりである。

【0011】図1は、使い捨ておむつの部分破断斜視図である。おむつは、透液性トップシート2と、不透液性バックシート3と、トップシート2とバックシート3との間に介在する吸液性コア4と、トップシート2の外面の側で環状に延びる液抵抗性の第1防漏シート5と、トップシート2の外面の側で第1防漏シート5を囲繞して環状に延びる液抵抗性の第2防漏シート6とを備えた積層パネル1で構成されている。パネル1は、縦方向に前胴周り域20と、後胴周り域22と、前後胴周り域20、22との間に位置する股下域21とを有し、互いに並行して縦方向へ延び、股下域21においてパネル1の内方へ向かって弧を画く両側縁部1aと、互いに並行して横方向へ延びる前後端縁部1b、1cとを有する。

【0012】第1防漏シート5は、パネル1の両側縁部1aの寸法を縦方向に二分して横方向へ延びる横中心線Y近傍からパネル1の後端縁部1cへ向かう後半部分1eに位置し、環状に延びる外周縁部5aと、外周縁部5aの内側で環状に延びる内周縁部5bと、互いの当接下に接合された縦方向両端部5cとを有する。

【0013】第1防漏シート5の略中央部には、股下域21の略半分と後胴周り域22の略半分とが露出する縦方向へ長い第1開口部7が画成されている。第1開口部7ではトップシート2が露出している。第1防漏シート5の内周縁部5bには、弹性伸縮性部材8が伸長状態で取り付けられている。

【0014】第2防漏シート6は、横中心線Y近傍からパネル1の前端縁部1bへ向かう前半部分1dとパネル1の後半部分1eとに位置し、環状に延びる外周縁部6aと、外周縁部6aの内側で環状に延びる内周縁部6bと、互いの当接下に接合された縦方向両端部6cとを有する。

【0015】第2防漏シート6の略中央部には、股下域21と前後胴周り域20、22の略半分とが露出する縦方向へ長い第2開口部9が画成されている。第2防漏シート6の内周縁部6bは、第1防漏シート5の内周縁部5bの外側に位置し、第2開口部9が第1開口部7を囲繞している。第2開口部9では、パネル1の前半部分1dにトップシート2が露出し、パネル1の後半部分1eに第1開口部7の全域が露出している。第2防漏シート6の内周縁部6bには、弹性伸縮性部材10が伸長状態で取り付けられている。第2防漏シート6の外周縁部6aからは、外周縁部6aの周り方向外方へ液抵抗性の支持シート15が延びている。

【0016】パネル1の両側縁部1aには、縦方向へ延びる脚周り用弹性部材11が伸長状態で取り付けられ、

パネル1の前後端縁部1b、1cには、横方向へ延びるフィルム状の胴周り用弹性部材12、13がトップシート2とバックシート3との間に介在し、それらシート2、3のうちの少なくとも一方の内面に伸長状態で取り付けられている。後胴周り域22におけるパネル1の両側縁部1aには、横方向内方へ延びるテープファスナ14が取り付けられ、前胴周り域20におけるバックシート3の外面には、テープファスナ14の止着域となる矩形のターゲットテープ(図示せず)が取り付けられている。

【0017】図1では、第1、2防漏シート5、6に取り付けられた弹性部材8、10と脚周り用弹性部材11と胴周り用弹性部材12、13との伸長状態が解除され、第1、2防漏シート5、6の内周縁部5a、6aとパネル1の両側縁部1aとパネル1の前後端縁部1b、1cとに沿ってギャザーが形成されている。

【0018】図2、3は、図1のA-A線矢視断面を示すおむつの斜視図と、図1のB-B線矢視断面図である。第1防漏シート5は、その外周縁部5aの一部がパネル1の内方へ折曲された状態で、トップシート2の外面に固定され、その内周縁部5bの一部がパネル1の内方へ折曲されて弹性部材8を被覆している。第1防漏シート5の縦方向両端部5cでは、縦方向両端部5cの固着域がパネル1の縦方向外方へ向かって延びている。

【0019】第2防漏シート6は、その外周縁部6aの一部がパネル1の内方へ折曲された状態で支持シート15の外面に固定され、その内周縁部6bの一部がパネル1の内方へ折曲されて弹性部材10を被覆している。第2防漏シート6の縦方向両端部6cでは、縦方向両端部6cの固着域がパネル1の縦方向外方へ向かって延びている。

【0020】後半部分1eでは、第1防漏シート5の外周縁部5aと第2防漏シート6の外周縁部6aとが互いに離間し、それらシート5、6の外周縁部5a、6aどうしの間でトップシート2が露出している。パネル1が、その内面を内側にして縦方向と横方向とに湾曲すると、第1防漏シート5とトップシート2とがパネル1の内方へ向かって開口するポケットP1を形成し、第2防漏シート6とトップシート2とがパネル1の内方へ向かって開口するポケットP2を形成する。

【0021】トップシート2は、コア4の両側縁部4aから横方向外方へわずかに延出し、コア4の両端縁部4bから縦方向外方へわずかに延出している。バックシート3と支持シート15とは、トップシート2の周縁からさらに横方向外方と縦方向外方とへ延出している。支持シート15の内面は、トップシート2の外面とバックシート3の内面とに固定されている。バックシート3と支持シート15との間には、脚周り用弹性部材11が介在し、それらシート3、15のうちの少なくとも一方の内面に伸長状態で取り付けられている。コア4は、トップ

シート2とバックシート3との少なくとも一方の内面に接合されている。

【0022】パネル1は、テープファスナ14の自由端部の内面に塗布された粘着剤を介して、テープファスナ14をターゲットテープに止着すると、左右一対の脚周り開口と、胴周り開口とが形成される(図示せず)。

【0023】パネル1は、パネル1の前半部分1dで開口する第2開口部9内に排泄された尿がトップシート2を通してコア4に吸収され、パネル1の後半部分1eで開口する第1開口部7内に排泄された便がトップシート2を通してコア4に吸収される。第1防漏シート5は、パネル1の前後半部分1d, 1eにおいて尿吸収域と便吸収域とを分離する機能を有するので、第1防漏シート5が障壁となって、第1開口部7内に排泄された便がパネル1の前半部分1dに侵入することや尿が第1開口部7内に侵入することを防止することができ、尿と便とが互いに混じり合ってしまうことを防ぐことができる。

【0024】パネル1では、排泄された便をポケットP1に収容することができるので、大量の便が排泄されたとしても、便がパネル1の前半部分1dへ侵入することを防止することができる。パネル1の前半部分1dに排泄された尿がパネル1の後端縁部1cへ向かって流動した場合でも、パネル1の後半部分1eに位置する第1防漏シート5の外周縁部5bと第2防漏シート6の外周縁部6bとの間を流れることができるので、パネル1の後半部分1eにおいても尿を吸収することができる。

【0025】トップシート2には、不織布や開孔プラスチックフィルム等の透液性のシート、好ましくは透液性であって親水性のシートが使用される。バックシート3には、不透液性のプラスチックフィルムまたはプラスチックフィルムと疎水性不織布とのラミネートシート、好ましくは通気不透液性のシートが使用される。第1, 2防漏シート5, 6と支持シート15とには、通気性不織布、好ましくは通気不透液性の不織布が使用される。第1防漏シート5の耐水圧は、第2防漏シート6のそれ以上であり、第1防漏シート5の耐水圧が、150~500mmの範囲、第2防漏シート6の耐水圧が、50~300mmの範囲にあることが好ましい。便には、タンパク質や脂質等の有機物が多く含まれているので、尿と比較してそれら防漏シート5, 6に対する表面張力が小さい。また、不織布を形成する繊維がポリオレフィン系樹脂である場合、便中の有機物とポリオレフィン系樹脂とか親和性を有するので、尿と比較して便が不織布に滲入しやすい。ゆえに、便が第1防漏シート5に滲入し難くするため、第2防漏シート6よりも第1防漏シート5の耐水圧を高くしている。

【0026】不織布としては、スパンレース、ニードルバッチ、メルトブローン、サーマルボンド、スパンボンド、ケミカルボンド等の不織布を使用することができ。不織布の構成繊維としては、ポリオレフィン系、ポ

リエスチル系、ポリアミド系、の各繊維、ポリエチレン/ポリプロピレンまたはポリエスチルの複合繊維等を使用することができる。

【0027】コア4は、フラッフバルブと高吸収性ポリマー粒子との混合物であり、所要の厚みに圧縮され、全体がティッシュペーパ等の透水性シートによって被覆されている。弾性部材8, 10, 11, 12, 13としては、合成ゴムや天然ゴム等のエラストマー、または、それらエラストマーを伸長状態で不織布に固着したものを使用することができる。コア4の接合、弾性部材8, 10, 11, 12, 13の取り付け、シート2, 3, 5, 6, 15どうしの固着には、ホットメルト接着剤等の接着剤や粘着剤の他に、熱溶着の技術を利用することができる。

【0028】パネル1には、第1防漏シート5がパネル1の前半部分1dに配置され、パネル1の前半部分1dに第1開口部7が画成されていてもよい。この場合は、パネル1の前半部分1dで開口する第1開口部7内に排泄された尿がトップシート2を通してコア4に吸収され、パネル1の後半部分1eで開口する第2開口部9内に排泄された便がトップシート2を通してコア4に吸収される。前半部分1dでは、第1防漏シート5が障壁となって、便が第1開口部7内に侵入することや尿がパネル1の後半部分1eに侵入することを防止することができ、尿と便とが互いに混じり合ってしまうことを防ぐことができる。

【0029】この発明は、図に示す開放型のおむつの他に、パンツ型のおむつでも実施することができる。

【0030】

【発明の効果】本発明に係る使い捨ておむつによれば、排泄された尿と便とのうちのいずれか一方が流動しようとしても、第1防漏シートが障壁となるので、それら尿と便とが混じり合ってしまうことを防ぐことができる。第1防漏シートと第2防漏シートとがトップシートの外面で環状に延びているので、排泄された尿と便とがおむつの両側縁部と前後端縁部とから漏れてしまうことを防ぐことができる。

【図面の簡単な説明】

【図1】使い捨ておむつの部分破断斜視図。

【図2】図1のA-A線矢視断面を示すおむつの斜視図。

【図3】図1のB-B線矢視断面図。

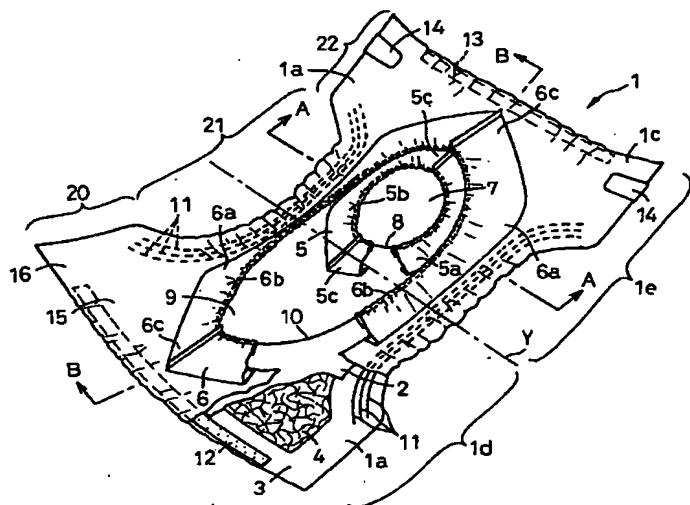
【符号の説明】

1	積層パネル
1a	両側縁部
1b	前端縁部
1c	後端縁部
1d	前半部分
1e	後半部分
2	透液性トップシート

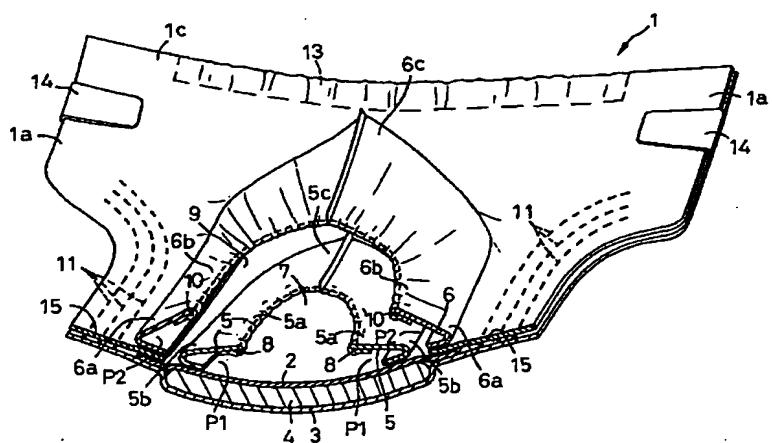
7		
3	不透液性バックシート	* 6 a
4	吸液性コア	6 b
5	第1防漏シート	7
5 a	外周縁部	9
5 b	内周縁部	Y
6	第2防漏シート	*

8

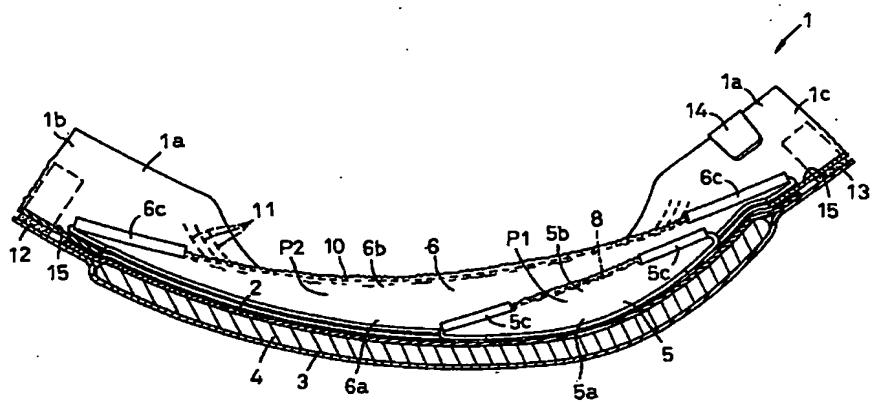
【図1】



【図2】



【図3】



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フロントページの続き

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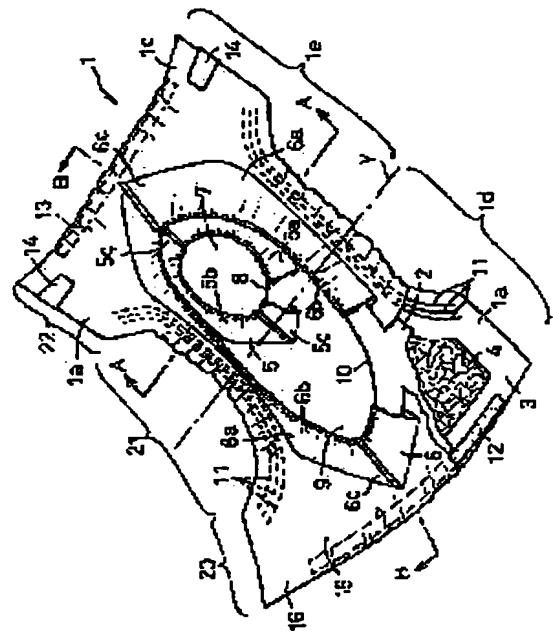
(72)Inventor : MISHIMA SACHIYOSHI  
OTSUBO TOSHIBUMI

## (54) DISPOSABLE DIAPER

### (57)Abstract:

PROBLEM TO BE SOLVED: To prevent the mixing of discharged urine with stool.

SOLUTION: A disposable diaper is constituted of a laminated panel 1 consisting of a top sheet 2, a back sheet 3, the core 4 interposed between these sheets 2, 3 and the first leak-proof sheet 5 extending on the outer surface of the top sheet 2 in an annular shape and the outer peripheral edge part 5a of the first leak-proof sheet 5 positioned on the latter half region 1e of the panel 1 is fixed to the panel 1 to demarcate a first opening part 7 to the almost central part of the first leak-proof sheet 5 and the second leak-proof sheet 6 surrounding the first leak-proof sheet 5 to extend in an annular shape is positioned on the first and latter half parts 1d, 1e of the panel 1 and the outer peripheral edge part 6a of the second leak-proof sheet 6 is fixed to the peripheral edge part of the panel 1 to demarcate a second opening part 8 to the almost central part of the second leak-proof sheet 6.



[Date of registration]

21.05.2004

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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